

REMARKS

Upon entry of the amendments, claims 1-13 and 18-37 will be pending in the above-identified application. Claims 14-17 have been canceled. New claims 18-37 have been added.

Drawing Corrections

Applicant is submitting new drawings in response to the Examiner's request.

Amendments to the Specification

The specification has been amended to correct typographical errors.

Rejections under § 103

The Examiner rejected claims 1-9 and 11-13 under 35 U.S.C. § 103(a) as being unpatentable over Osterholm US 4,450,841 ("Osterholm") in view of Leonard US 3,927,980 ("Leonard") and Ginsburg et al. US 6,497,721 ("Ginsburg"). Claim 1 recites an apparatus for modulating the temperature and pressure within a body cavity by means of recirculation of a biological or biocompatible liquid within the cavity, but outside of blood vessels, which comprises: (a) first pump means for infusing liquid at a controlled temperature and flow rate into the cavity; (b) means for monitoring the temperature within the cavity; (c) means for monitoring the pressure within the cavity; and (d) second pump means for withdrawing liquid at a controlled flow rate from the cavity. This combination of features is neither disclosed nor suggested by the prior art.

In particular, the Examiner's argument for the obviousness of claim 1 relies on Ginsburg's teaching of the use of a brain tissue temperature monitor to control the heating or cooling of blood flowing to the brain to reach his conclusion that it would have been obvious to add a cavity temperature monitor to the Osterholm system. This argument is flawed for at least three reasons, however.

First, Ginsburg does not explicitly disclose the feature that the Examiner has admitted Osterholm lacks: means for monitoring the temperature of the cavity to which the liquid is infused. At most, Ginsburg is the Examiner's logical stepping stone which the Examiner uses to reach his hindsight-based conclusion that such temperature monitoring would have been obvious. If Ginsburg did demonstrate the obviousness of this combination, however, Ginsburg would

have disclosed this feature. Instead, however, Ginsburg disclosed something far different: Monitoring of temperature far away from the location where the cooling is taking place.

Second, one skilled in the art would not have looked to Ginsburg to modify the Osterholm device. Osterholm introduced temperature-controlled fluid directly to the cavity of interest. Ginsburg, on the other hand, chose to control the temperature of blood perfusing the region of interest. Osterholm and Ginsburg took fundamentally different approaches to controlling tissue temperature, and one skilled in the art would not have looked to Ginsburg for potential modifications to the Osterholm system.

Finally, claim 1 specifically excludes modulation of temperature of blood vessels, which is exactly what Ginsburg does. Ginsburg—and the combination of Osterholm and Ginsburg—is therefore explicitly outside the scope of claim 1. For these reasons, claim 1, and claims 2-13 depending from claim 1, are patentable over Osterholm, Leonard, Ginsburg and the other prior art of record under § 103(a).

New claims

Applicant has added new claims 18-37 to further define the invention. These new claims are patentable over the prior art of record.

New claim 18 recites an apparatus for modulating introduction and removal of a liquid within a cavity of a patient's body, the cavity comprising a cavity outside of blood vessels. The combination of features recited by claim 18 is neither disclosed nor suggested by the prior art of record. In particular, none of Osterholm, Leonard or Ginsburg discloses a pumping system (1) operatively coupled to sensors in the patient's body sensing a condition of liquid in the cavity and (2) configured for introduction and removal of liquid from the cavity so as to maintain a selected condition value. Claim 18, and claims 19-27 depending from it, are patentable over the prior art of record.

Likewise, new claim 28 recites a feedback-controlled apparatus for introduction and removal of a liquid within a cavity (other than blood vessels) in a patient's body. The prior art does not disclose or suggest the combination of features recited by claim 28: a catheter configured for insertion into a body cavity other than a blood vessel for introduction and removal of liquid from the body cavity, one or more sensors sensing a biological parameter of the patient's body, and a pumping system coupled to the catheter and the sensors to modulate a

property of the liquid in response to sensor signals to maintain the biological parameter within a selected range. Claim 28, and claims 29-31 depending from it, are patentable over the prior art of record.

Finally, new claim 32 recites a method of maintaining a liquid condition parameter within a body cavity other than a blood vessel. The combination of method steps in claim 32 is neither disclosed nor suggested in the prior art: Pumping liquid into and out of the cavity, monitoring a parameter of the liquid within the cavity from a sensor disposed in the patient's body, and controlling a liquid parameter such as temperature, pressure and/or flow rate in response to a monitored parameter. Claim 32, and claims 33-37 depending from it, are patentable over the prior art of record.

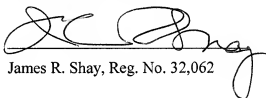
CONCLUSION

Applicants request reconsideration and allowance of all claims pending in this application. If a telephone conference would expedite prosecution of this application, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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By:

A handwritten signature in black ink, appearing to read 'James R. Shay', is written over a horizontal line.

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